

		1				5					10					
		Gly	Thr	Tyr	Val	Tyr	Asn	His	Leu	Thr	Pro	Leu	Arg	Asp	Trp	
ATT	CGG	GGC	ACC	TAT	GTT	TAT	AAC	CAT	CTC	ACT	CCT	CTT	CGG	GAC	TGG	
TAA	GCC	CCG	TGG	ATA	CAA	ATA	TTG	GTA	GAG	TGA	GGA	GAA	GCC	CTG	ACC	
15					20					25					30	
Ala	His	Asn	Gly	Leu	Arg	Asp	Leu	Ala	Val	Ala	Val	Glu	Pro	Val	Val	
GCG	CAC	AAC	GGC	TTG	CGA	GAT	CTG	GCC	GTG	GCT	GTA	GAG	CCA	GTC	GTC	
CGC	GTG	TTG	CCG	AAC	GCT	CTA	GAC	CGG	CAC	CGA	CAT	CTC	GGT	CAG	CAG	
				35					40					45		
Phe	Ser	Gln	Met	Glu	Thr	Lys	Leu	Ile	Thr	Trp	Gly	Ala	Asp	Thr	Ala	
TTC	TCC	CAA	ATG	GAG	ACC	AAG	CTC	ATC	ACG	TGG	GGG	GCA	GAT	ACC	GCC	
AAG	AGG	GTT	TAC	CTC	TGG	TTC	GAG	TAG	TGC	ACC	CCC	CGT	CTA	TGG	CGG	
			50					55					// 60			
Ala	Cys	Gly	Asp	Ile	Ile	Asn	Gly	Leu	Pro	Val	Ser	Ala	Arg	Arg	Gly	
GCG	TGC	GGT	GAC	ATC	ATC	AAC	GGC	TTG	CCT	GTT	TCC	GCC	CGC	AGG	GGC	
CGC	ACG	CCA	CTG	TAG	TAG	TTG	CCG	AAC	GGA	CAA	AGG	CGG	GCG	TCC	CCG	
		65					70					75				
Arg	Glu	Ile	Leu	Leu	Gly	Pro	Ala	Asp	Gly	Met	Val	Ser	Lys	Gly	Trp	
CGG	GAG	ATA	CTG	CTC	GGG	CCA	GCC	GAT	GGA	ATG	GTC	TCC	AAG	GGT	TGG	
GCC	CTC	TAT	GAC	GAG	CCC	GGT	CGG	CTA	CCT	TAC	CAG	AGG	TTC	CCA	ACC	
	80					85					90					
Arg	Leu	Leu	Ala	Pro	Ile	Thr	Ala	Tyr	Ala	Gln	Gln	Thr	Arg	Gly	Leu	
AGG	TTG	CTG	GCG	CCC	ATC	ACG	GCG	TAC	GCC	CAG	CAG	ACA	AGG	GGC	CTC	
TCC	AAC	GAC	CGC	GGG	TAG	TGC	CGC	ATG	CGG	GTC	GTC	TGT	TCC	CCG	GAG	
95					100					105					110	
Leu	Gly	Cys	Ile	Ile	Thr	Ser	Leu	Thr	Gly	Arg	Asp	Lys	Asn	Gln	Val	
CTA	GGG	TGC	ATA	ATC	ACC	AGC	CTA	ACT	GGC	CGG	GAC	AAA	AAC	CAA	GTG	
GAT	CCC	ACG	TAT	TAG	TGG	TCG	GAT	TGA	CCG	GCC	CTG	TTT	TTG	GTT	CAC	
				115					120					125		
Glu	Gly	Glu	Val	Gln	Ile	Val	Ser	Thr	Ala	Ala	Gln	Thr	Phe	Leu	Ala	
GAG	GGT	GAG	GTC	CAG	ATT	GTG	TCA	ACT	GCT	GCC	CAA	ACC	TTC	CTG	GCA	
CTC	CCA	CTC	CAG	GTC	TAA	CAC	AGT	TGA	CGA	CGG	GTT	TGG	AAG	GAC	CGT	

Figure 1

Thr	Cys	Ile	Ile	Asn	Gly	Val	Cys	Trp	Thr	Val	Tyr	His	Gly	Ala	Gly
ACG	TGC	ATC	ATC	AAT	GGG	GTG	TGC	TGG	ACT	GTC	TAC	CAC	GGG	GCC	GGA
TGC	ACG	TAG	TAG	TTA	CCC	CAC	ACG	ACC	TGA	CAG	ATG	GTG	CCC	CGG	CCT
Thr	Arg	Thr	Ile	Ala	Ser	Pro	Lys	Gly	Pro	Val	Ile	Gln	Met	Tyr	Thr
ACG	AGG	ACC	ATC	GCG	TCA	CCC	AAG	GGT	CCT	GTC	ATC	CAG	ATG	TAT	ACC
TGC	TCC	TGG	TAG	CGC	AGT	GGG	TTC	CCA	GGA	CAG	TAG	GTC	TAC	ATA	TGG
Asn	Val	Asp	Gln	Asp	Leu	Val	Gly	Trp	Pro	Ala	Ser	Gln	Gly	Thr	Arg
AAT	GTA	GAC	CAA	GAC	CTT	GTG	GGC	TGG	CCC	GCT	TCG	CAA	GGT	ACC	CGC
TTA	CAT	CTG	GTT	CTG	GAA	CAC	CCG	ACC	GGG	CGA	AGC	GTT	CCA	TGG	GCG
Ser	Leu	Thr	Pro	Cys	Thr	Cys	Gly	Ser	Ser	Asp	Leu	Tyr	Leu	Val	Thr
TCA	TTG	ACA	CCC	TGC	ACT	TGC	GGC	TCC	TCG	GAC	CTT	TAC	CTG	GTC	ACG
AGT	AAC	TGT	GGG	ACG	TGA	ACG	CCG	AGG	AGC	CTG	GAA	ATG	GAC	CAG	TGC
Arg	His	Ala	Asp	Val	Ile	Pro	Val	Arg	Arg	Arg	Gly	Asp	Ser	Arg	Gly
AGG	CAC	GCC	GAT	GTC	ATT	CCC	GTG	CGC	CGG	CGG	GGT	GAT	AGC	AGG	GGC
TCC	GTG	CGG	CTA	CAG	TAA	GGG	CAC	GCG	GCC	GCC	CCA	CTA	TCG	TCC	CCG
Ser	Leu	Leu	Ser	Pro	Arg	Pro	Ile	Ser	Tyr	Leu	Lys	Gly	Ser	Ser	Gly
AGC	CTG	CTG	TCG	CCC	CGG	CCC	ATT	TCC	TAC	TTG	AAA	GGC	TCC	TCG	GGG
TCG	GAC	GAC	AGC	GGG	GCC	GGG	TAA	AGG	ATG	AAC	TTT	CCG	AGG	AGC	CCC
Gly	Pro	Leu	Leu	Cys	Pro	Ala	Gly	His	Ala	Val	Gly	Ile	Phe	Arg	Ala
GGT	CCG	CTG	TTG	TGC	CCC	GCG	GGG	CAC	GCC	GTG	GGC	ATA	TTT	AGG	GCC
CCA	GGC	GAC	AAC	ACG	GGG	CGC	CCC	GTG	CGG	CAC	CCG	TAT	AAA	TCC	CGG
Ala	Val	Cys	Thr	Arg	Gly	Val	Ala	Lys	Ala	Val	Asp	Phe	Ile	Pro	Val
GCG	GTG	TGC	ACC	CGT	GGA	GTG	GCT	AAG	GCG	GTG	GAC	TTT	ATC	CCT	GTG
CGC	CAC	ACG	TGG	GCA	CCT	CAC	CGA	TTC	CGC	CAC	CTG	AAA	TAG	GGA	CAC

↑  
NaeI

Figure 1 (continued)

255	Glu	Asn	Leu	Glu	Thr	Thr	Met	Arg	Ser	Pro	Val	Phe	Thr	Asp	Asn	Ser
	GAG	AAC	CTA	GAG	ACA	ACC	ATG	AGG	TCC	CCG	GTG	TTC	ACG	GAT	AAC	TCC
	CTC	TTG	GAT	CTC	TGT	TGG	TAC	TCC	AGG	GGC	CAC	AAG	TGC	CTA	TTG	AGG
	Ser	Pro	Pro	Val	Val	Pro	Gln	Ser	Phe	Gln	Val	Ala	His	Leu	His	Ala
	TCT	CCA	CCA	GTA	GTG	CCC	CAG	AGC	TTC	CAG	GTG	GCT	CAC	CTC	CAT	GCT
	AGA	GGT	GGT	CAT	CAC	GGG	GTC	TCG	AAG	GTC	CAC	CGA	GTG	GAG	GTA	CGA
	Pro	Thr	Gly	Ser	Gly	Lys	Ser	Thr	Lys	Val	Pro	Ala	Ala	Tyr	Ala	Ala
	CCC	ACA	GGC	AGC	GGC	AAA	AGC	ACC	AAG	GTC	CCG	GCT	GCA	TAT	GCA	GCT
	GGG	TGT	CCG	TCG	CCG	TTT	TCG	TGG	TTC	CAG	GGC	CGA	CGT	ATA	CGT	CGA
													↑			
													NdeI			
	Gln	Gly	Tyr	Lys	Val	Leu	Val	Leu	Asn	Pro	Ser	Val	Ala	Ala	Thr	Leu
	CAG	GGC	TAT	AAG	GTG	CTA	GTA	CTC	AAC	CCC	TCT	GTT	GCT	GCA	ACA	CTG
	GTC	CCG	ATA	TTC	CAC	GAT	CAT	GAG	TTG	GGG	AGA	CAA	CGA	CGT	TGT	GAC
	Gly	Phe	Gly	Ala	Tyr	Met	Ser	Lys	Ala	His	Gly	Ile	Asp	Pro	Asn	Ile
	GGC	TTT	GGT	GCT	TAC	ATG	TCC	AAG	GCT	CAT	GGG	ATC	GAT	CCT	AAC	ATC
	CCG	AAA	CCA	CGA	ATG	TAC	AGG	TTC	CGA	GTA	CCC	TAG	CTA	GGA	TTG	TAG
335	Arg	Thr	Gly	Val	Arg	Thr	Ile	Thr	Thr	Gly	Ser	Pro	Ile	Thr	Tyr	Ser
	AGG	ACC	GGG	GTG	AGA	ACA	ATT	ACC	ACT	GGC	AGC	CCC	ATC	ACG	TAC	TCC
	TCC	TGG	CCC	CAC	TCT	TGT	TAA	TGG	TGA	CCG	TCG	GGG	TAG	TGC	ATG	AGG
	Thr	Tyr	Gly	Lys	Phe	Leu	Ala	Asp	Gly	Gly	Cys	Ser	Gly	Gly	Ala	Tyr
	ACC	TAC	GGC	AAG	TTC	CTT	GCC	GAC	GGC	GGG	TGC	TCG	GGG	GGC	GCT	TAT
	TGG	ATG	CCG	TTC	AAG	GAA	CGG	CTG	CCG	CCC	ACG	AGC	CCC	CCG	CGA	ATA
	Asp	Ile	Ile	Ile	Cys	Asp	Glu	Cys	His	Ser	Thr	Asp	Ala	Thr	Ser	Ile
	GAC	ATA	ATA	ATT	TGT	GAC	GAG	TGC	CAC	TCC	ACG	GAT	GCC	ACA	TCC	ATC
	CTG	TAT	TAT	TAA	ACA	CTG	CTC	ACG	GTG	AGG	TGC	CTA	CGG	TGT	AGG	TAG

Figure 1 (continued)

		385					390					395					
Leu	Gly	Ile	Gly	Thr	Val	Leu	Asp	Gln	Ala	Glu	Thr	Ala	Gly	Ala	Arg		
TTG	GGC	ATT	GGC	ACT	GTC	CTT	GAC	CAA	GCA	GAG	ACT	GCG	GGG	GCG	AGA		
AAC	CCG	TAA	CCG	TGA	CAG	GAA	CTG	GTT	CGT	CTC	TGA	CGC	CCC	CGC	TCT		

	400					405					410						
Leu	Val	Val	Leu	Ala	Thr	Ala	Thr	Pro	Pro	Gly	Ser	Val	Thr	Val	Pro		
CTG	GTT	GTG	CTC	GCC	ACC	GCC	ACC	CCT	CCG	GGC	TCC	GTC	ACT	GTG	CCC		
GAC	CAA	CAC	GAG	CGG	TGG	CGG	TGG	GGA	GGC	CCG	AGG	CAG	TGA	CAC	GGG		

415						420					425					430	
His	Pro	Asn	Ile	Glu	Glu	Val	Ala	Leu	Ser	Thr	Thr	Gly	Glu	Ile	Pro		
CAT	CCC	AAC	ATC	GAG	GAG	GTT	GCT	CTG	TCC	ACC	ACC	GGA	GAG	ATC	CCT		
GTA	GGG	TTG	TAG	CTC	CTC	CAA	CGA	GAC	AGG	TGG	TGG	CCT	CTC	TAG	GGA		

				435						440				445			
Phe	Tyr	Gly	Lys	Ala	Ile	Pro	Leu	Glu	Val	Ile	Lys	Gly	Gly	Arg	His		
TTT	TAC	GGC	AAG	GCT	ATC	CCC	CTC	GAA	GTA	ATC	AAG	GGG	GGG	AGA	CAT		
AAA	ATG	CCG	TTC	CGA	TAG	GGG	GAG	CTT	CAT	TAG	TTC	CCC	CCC	TCT	GTA		

			450					455				460					
Leu	Ile	Phe	Cys	His	Ser	Lys	Lys	Lys	Cys	Asp	Glu	Leu	Ala	Ala	Lys		
CTC	ATC	TTC	TGT	CAT	TCA	AAG	AAG	AAG	TGC	GAC	GAA	CTC	GCC	GCA	AAG		
GAG	TAG	AAG	ACA	GTA	AGT	TTC	TTC	TTC	ACG	CTG	CTT	GAG	CGG	CGT	TTC		

		465				470					475						
Leu	Val	Ala	Leu	Gly	Ile	Asn	Ala	Val	Ala	Tyr	Tyr	Arg	Gly	Leu	Asp		
CTG	GTC	GCA	TTG	GGC	ATC	AAT	GCC	GTG	GCC	TAC	TAC	CGC	GGT	CTT	GAC		
GAC	CAG	CGT	AAC	CCG	TAG	TTA	CGG	CAC	CGG	ATG	ATG	GCG	CCA	GAA	CTG		

	480					485				490							
Val	Ser	Val	Ile	Pro	Thr	Ser	Gly	Asp	Val	Val	Val	Val	Ala	Thr	Asp		
GTG	TCC	GTC	ATC	CCG	ACC	AGC	GGC	GAT	GTT	GTC	GTC	GTG	GCA	ACC	GAT		
CAC	AGG	CAG	TAG	GGC	TGG	TCG	CCG	CTA	CAA	CAG	CAG	CAC	CGT	TGG	CTA		

Figure 1 (continued)



			610					615					620			
Cys	Gln	Asp	His	Leu	Glu	Phe	Trp	Glu	Gly	Val	Phe	Thr	Gly	Leu	Thr	
TGC	CAG	GAC	CAT	CTT	GAA	TTT	TGG	GAG	GGC	GTC	TTT	ACA	GGC	CTC	ACT	
ACG	GTC	CTG	GTA	GAA	CTT	AAA	ACC	CTC	CCG	CAG	AAA	TGT	CCG	GAG	TGA	

		625					630					635				
His	Ile	Asp	Ala	His	Phe	Leu	Ser	Gln	Thr	Lys	Gln	Ser	Gly	Glu	Asn	
CAT	ATA	GAT	GCC	CAC	TTT	CTA	TCC	CAG	ACA	AAG	CAG	AGT	GGG	GAG	AAC	
GTA	TAT	CTA	CGG	GTG	AAA	GAT	AGG	GTC	TGT	TTC	GTC	TCA	CCC	CTC	TTG	

	640					645					650					
Leu	Pro	Tyr	Leu	Val	Ala	Tyr	Gln	Ala	Thr	Val	Cys	Ala	Arg	Ala	Gln	
CTT	CCT	TAC	CTG	GTA	GCG	TAC	CAA	GCC	ACC	GTG	TGC	GCT	AGG	GCT	CAA	
GAA	GGA	ATG	GAC	CAT	CGC	ATG	GTT	CGG	TGG	CAC	ACG	CGA	TCC	CGA	GTT	

655					660					665					670	
Ala	Pro	Pro	Pro	Ser	Trp	Asp	Gln	Met	Trp	Lys	Cys	Leu	Ile	Arg	Leu	
GCC	CCT	CCC	CCA	TCG	TGG	GAC	CAG	ATG	TGG	AAG	TGT	TTG	ATT	CGC	CTC	
CGG	GGA	GGG	GGT	AGC	ACC	CTG	GTC	TAC	ACC	TTC	ACA	AAC	TAA	GCG	GAG	

				675					680				685			
Lys	Pro	Thr	Leu	His	Gly	Pro	Thr	Pro	Leu	Leu	Tyr	Arg	Leu	Gly	Ala	
AAG	CCC	ACC	CTC	CAT	GGG	CCA	ACA	CCC	CTG	CTA	TAC	AGA	CTG	GGC	GCT	
TTC	GGG	TGG	GAG	GTA	CCC	GGT	TGT	GGG	GAC	GAT	ATG	TCT	GAC	CCG	CGA	

Figure 1 (continued)



C20c:

Asn Ser Glu Asn Gln Val Glu Gly Glu Val Gln Ile Val Ser Thr Ala  
AAT TCG GAA AAC CAA GTG GAG GGT GAG GTC CAG ATT GTG TCA ACT GCT  
TTA AGC CTT TTG GTT CAC CTC CCA CTC CAG GTC TAA CAC AGT TGA CGA

↑  
EcoRI

Ala Gln Thr Phe Leu Ala Thr Cys Ile Asn Gly Val Cys Trp Thr Val  
GCC CAA ACC TTC CTG GCA ACG TGC ATC AAT GGG GTG TGC TGG ACT GTC  
CGG GTT TGG AAG GAC CGT TGC ACG TAG TTA CCC CAC ACG ACC TGA CAG

↑  
SfaNI

Tyr His Gly Ala Gly Thr Arg Thr Ile Ala Ser Pro Lys Gly Pro Val  
TAC CAC GGG GCC GGA ACG AGG ACC ATC GCG TCA CCC AAG GGT CCT GTC  
ATG GTG CCC CGG CCT TGC TCC TGG TAG CGC AGT GGG TTC CCA GGA CAG

Ile Gln Met Tyr Thr Asn Val Asp Gln Asp Leu Val Gly Trp Pro Ala  
ATC CAG ATG TAT ACC AAT GTA GAC CAA GAC CTT GTG GGC TGG CCC GCT  
TAG GTC TAC ATA TGG TTA CAT CTG GTT CTG GAA CAC CCG ACC GGG CGA

Ser Gln Gly Thr Arg Ser Leu Thr Pro Cys Thr Cys Gly Ser Ser Asp  
TCG CAA GGT ACC CGC TCA TTG ACA CCC TGC ACT TGC GGC TCC TCG GAC  
AGC GTT CCA TGG GCG AGT AAC TGT GGG ACG TGA ACG CCG AGG AGC CTG

Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro Val Arg Arg Arg  
CTT TAC CTG GTC ACG AGG CAC GCC GAT GTC ATT CCC GTG CGC CGG CGG  
GAA ATG GAC CAG TGC TCC GTG CGG CTA CAG TAA GGG CAC GCG GCC GCC

↑  
NaeI

Gly Asp Ser Arg Gly Ser Leu Val Ser Pro Arg Pro Ile Ser Tyr Leu  
GGT GAT AGC AGG GGC AGC CTC GTG TCG CCC CGG CCC ATT TCC TAC TTG  
CCA CTA TCG TCC CCG TCG GAG CAC AGC GGG GCC GGG TAA AGG ATG AAC

Lys Gly Ser Ser Gly Gly Pro Leu Pro Asn  
AAA GGC TCC TCG GGG GGT CCG CTG CCG AAT TC  
TTT CCG AGG AGC CCC CCA GGC GAC GGC TTA AG

↑  
EcoRI

Figure 2

3019307

C26d:

Glu	Phe	Gly	Gly	Leu	Leu	Leu	Cys	Pro	Ala	Ala	Ala	Val	Gly	Ile	Phe
GAA	TTC	GGG	GGC	CTG	CTG	TTG	TGC	CCC	GCG	GCA	GCC	GTG	GGC	ATA	TTT
CTT	AAG	CCC	CCG	GAC	GAC	AAC	ACG	GGG	CGC	CGT	CGG	CAC	CCG	TAT	AAA

↑  
EcoRI

Arg	Ala	Ala	Val	Cys	Thr	Arg	Gly	Val	Ala	Lys	Ala	Val	Asp	Phe	Ile
AGG	GCC	GCG	GTG	TGC	ACC	CGT	GGA	GTG	GCT	AAG	GCG	GTG	GAC	TTT	ATC
TCC	CGG	CGC	CAC	ACG	TGG	GCA	CCT	CAC	CGA	TTC	CGC	CAC	CTG	AAA	TAG

↑  
DdeI

Pro	Val	Glu	Asn	Leu	Glu	Thr	Thr	Met	Arg	Ser	Pro	Val	Phe	Thr	Asp
CCT	GTG	GAG	AAC	CTA	GAG	ACA	ACC	ATG	AGG	TCC	CCG	GTG	TTC	ACG	GAT
GGA	CAC	CTC	TTG	GAT	CTC	TGT	TGG	TAC	TCC	AGG	GGC	CAC	AAG	TGC	CTA

Asn	Ser	Ser	Pro	Pro	Val	Val	Pro	Gln	Ser	Phe	Gln	Val	Ala	His	Leu
AAC	TCC	TCT	CCA	CCA	GTA	GTG	CCC	CAG	AGC	TTC	CAG	GTG	GCT	CAC	CTC
TTG	AGG	AGA	GGT	GGT	CAT	CAC	GGG	GTC	TCG	AAG	GTC	CAC	CGA	GTG	GAG

↑  
EcoRII

His	Ala	Pro	Arg	Ile
CAT	GCT	CCC	CGA	ATT C
GTA	CGA	GGG	GCT	TAA G

↑  
EcoRI

Figure 3



C8h:

Pro Cys Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala  
CCC TGC ACT TGC GGC TCC TCG GAC CTT TAC CTG GTC ACG AGG CAC GCC  
GGG ACG TGA ACG CCG AGG AGC CTG GAA ATG GAC CAG TGC TCC GTG CGG

Asp Val Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu  
GAT GTC ATT CCC GTG CGC CGG CGG GGT GAT AGC AGG GGC AGC CTG CTG  
CTA CAG TAA GGG CAC GCG GCC GCC CCA CTA TCG TCC CCG TCG GAC GAC

Ser Pro Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu  
TCG CCC CGG CCC ATT TCC TAC TTG AAA GGC TCC TCG GGG GGT CCG CTG  
AGC GGG GCC GGG TAA AGG ATG AAC TTT CCG AGG AGC CCC CCA GGC GAC

Leu Cys Pro Ala Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys  
TTG TGC CCC GCG GGG CAC GCC GTG GGC ATA TTT AGG GCC GCG GTG TGC  
AAC ACG GGG CGC CCC GTG CGG CAC CCG TAT AAA TCC CGG CGC CAC ACG

Thr Arg Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Asn Leu  
ACC CGT GGA GTG GCT AAG GCG GTG GAC TTT ATC CCT GTG GAG AAC CTA  
TGG GCA CCT CAC CGA TTC CGC CAC CTG AAA TAG GGA CAC CTC TTG GAT

↑  
DdeI

Glu Thr Thr Met Arg Ser Pro Val Phe Thr Asp Asn Ser  
GAG ACA ACC ATG AGG TCC CCG GTG TTC ACG GAT AAC TCC TC  
CTC TGT TGG TAC TCC AGG GGC CAC AAG TGC CTA TTG AGG AG

Figure 4

C7f:

Ile Arg Gly Thr Tyr Val Tyr Asn His Leu Thr Pro Leu Arg Asp Trp  
ATT CGG GGC ACC TAT GTT TAT AAC CAT CTC ACT CCT CTT CGG GAC TGG  
TAA GCC CCG TGG ATA CAA ATA TTG GTA GAG TGA GGA GAA GCC CTG ACC

↑  
EcoRI

Ala His Asn Gly Leu Arg Asp Leu Ala Val Ala Val Glu Pro Val Val  
GCG CAC AAC GGC TTG CGA GAT CTG GCC GTG GCT GTA GAG CCA GTC GTC  
CGC GTG TTG CCG AAC GCT CTA GAC CGG CAC CGA CAT CTC GGT CAG CAG

Phe Ser Gln Met Glu Thr Lys Leu Ile Thr Trp Gly Ala Asp Thr Ala  
TTC TCC CAA ATG GAG ACC AAG CTC ATC ACG TGG GGG GCA GAT ACC GCC  
AAG AGG GTT TAC CTC TGG TTC GAG TAG TGC ACC CCC CGT CTA TGG CGG

Ala Cys Gly Asp Ile Ile Asn Gly Leu Pro Val Ser Ala Arg Arg Gly  
GCG TGC GGT GAC ATC ATC AAC GGC TTG CCT GTT TCC GCC CGC AGG GGC  
CGC ACG CCA CTG TAG TAG TTG CCG AAC GGA CAA AGG CGG GCG TCC CCG

Arg Glu Ile Leu Leu Gly Pro Ala Asp Gly Met Val Ser Lys Gly Trp  
CGG GAG ATA CTG CTC GGG CCA GCC GAT GGA ATG GTC TCC AAG GGT TGG  
GCC CTC TAT GAC GAG CCC GGT CGG CTA CCT TAC CAG AGG TTC CCA ACC

Arg Leu Leu Ala Pro Ile Thr Ala Tyr Ala Gln Gln Thr Arg Gly Leu  
AGG TTG CTG GCG CCC ATC ACG GCG TAC GCC CAG CAG ACA AGG GGC CTC  
TCC AAC GAC CGC GGG TAG TGC CGC ATG CGG GTC GTC TGT TCC CCG GAG

Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly Arg Asp Lys Asn Gln Val  
CTA GGG TGC ATA ATC ACC AGC CTA ACT GGC CGG GAC AAA AAC CAA GTG  
GAT CCC ACG TAT TAG TGG TCG GAT TGA CCG GCC CTG TTT TTG GTT CAC

Glu Gly Glu Val Gln Ile Val Ser Thr Ala Ala Gln Thr Phe Leu Ala  
GAG GGT GAG GTC CAG ATT GTG TCA ACT GCT GCC CAA ACC TTC CTG GCA  
CTC CCA CTC CAG GTC TAA CAC AGT TGA CGA CGG GTT TGG AAG GAC CGT

Thr Cys Ile Asn Gly Val Cys Trp Pro Asn  
ACG TGC ATC AAT GGG GTG TGC TGG CCG AAT TC  
TGC ACG TAG TTA CCC CAC ACG ACC GGC TTA AG

↑  
SfaNI

↑  
EcoRI

Figure 5

C31:

Glu Phe Gly Ser Val Ile Pro Thr Ser Gly Asp Val Val Val Val Ala  
GAA TTC GGG TCC GTC ATC CCG ACC AGC GGC GAT GTT GTC GTC GTC GCA  
CTT AAG CCC AGG CAG TAG GGC TGG TCG CCG CTA CAA CAG CAG CAG CGT

↑  
EcoRI

Thr Asp Ala Leu Met Thr Gly Tyr Thr Gly Asp Phe Asp Ser Val Ile  
ACC GAT GCC CTC ATG ACC GGC TAT ACC GGC GAC TTC GAC TCG GTG ATA  
TGG CTA CGG GAG TAC TGG CCG ATA TGG CCG CTG AAG CTG AGC CAC TAT

↑  
HinfI

Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe Ser Leu Asp Pro  
GAC TGC AAT ACG TGT GTC ACC CAG ACA GTC GAT TTC AGC CTT GAC CCT  
CTG ACG TTA TGC ACA CAG TGG GTC TGT CAG CTA AAG TCG GAA CTG GGA

Thr Phe Thr Ile Glu Thr Ile Thr Leu Pro Gln Asp Ala Val Ser Arg  
ACC TTC ACC ATT GAG ACA ATC ACG CTC CCC CAA GAT GCT GTC TCC CGC  
TGG AAG TGG TAA CTC TGT TAG TGC GAG GGG GTT CTA CGA CAG AGG GCG

Thr Gln Arg Arg Gly Arg Thr Gly Arg Gly Lys Pro Gly Ile Tyr Arg  
ACT CAA CGT CGG GGC AGG ACT GGC AGG GGG AAG CCA GGC ATC TAC AGA  
TGA GTT GCA GCC CCG TCC TGA CCG TCC CCC TTC GGT CCG TAG ATG TCT

Phe Val Ala Pro Gly Glu Arg Pro Ser Gly Met Phe Asp Ser Ser Val  
TTT GTG GCA CCG GGG GAG CGC CCC TCC GGC ATG TTC GAC TCG TCC GTC  
AAA CAC CGT GGC CCC CTC GCG GGG AGG CCG TAC AAG CTG AGC AGG CAG

↑  
BglI

↑  
HinfI

Leu Cys Glu Cys Pro Asn  
CTC TGT GAG TGC CCG AAT TC  
GAG ACA CTC ACG GGC TTA AG

↑  
EcoRI

Figure 6

C35:

Ile Arg Ser Ile Glu Thr Ile Thr Leu Pro Gln Asp Ala Val Ser Arg  
 ATT CGG TCC ATT GAG ACA ATC ACG CTC CCC CAG GAT GCT GTC TCC CGC  
 TAA GCC AGG TAA CTC TGT TAG TGC GAG GGG GTC CTA CGA CAG AGG GCG

↑  
 EcoRI

Thr Gln Arg Arg Gly Arg Thr Gly Arg Gly Lys Pro Gly Ile Tyr Arg  
 ACT CAA CGT CGG GGC AGG ACT GGC AGG GGG AAG CCA GGC ATC TAC AGA  
 TGA GTT GCA GCC CCG TCC TGA CCG TCC CCC TTC GGT CCG TAG ATG TCT

Phe Val Ala Pro Gly Glu Arg Pro Ser Gly Met Phe Asp Ser Ser Val  
 TTT GTG GCA CCG GGG GAG CGC CCC TCC GGC ATG TTC GAC TCG TCC GTC  
 AAA CAC CGT GGC CCC CTC GCG GGG AGG CCG TAC AAG CTG AGC AGG CAG

↑  
 BglI

Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu Leu Thr Pro  
 CTC TGT GAG TGC TAT GAC GCA GGC TGT GCT TGG TAT GAG CTC ACG CCC  
 GAG ACA CTC ACG ATA CTG CGT CCG ACA CGA ACC ATA CTC GAG TGC GGG

Ala Glu Thr Thr Val Arg Leu Arg Ala Tyr Met Asn Thr Pro Gly Leu  
 GCC GAG ACT ACA GTT AGG CTA CGA GCG TAC ATG AAC ACC CCG GGG CTT  
 CGG CTC TGA TGT CAA TCC GAT GCT CGC ATG TAC TTG TGG GGC CCC GAA

Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Gly Val Phe Thr Gly  
 CCC GTG TGC CAG GAC CAT CTT GAA TTT TGG GAG GGC GTC TTT ACA GGC  
 GGG CAC ACG GTC CTG GTA GAA CTT AAA ACC CTC CCG CAG AAA TGT CCG

Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys Gln Ser Gly  
 CTC ACT CAT ATA GAT GCC CAC TTT CTA TCC CAG ACA AAG CAG AGT GGG  
 GAG TGA GTA TAT CTA CGG GTG AAA GAT AGG GTC TGT TTC GTC TCA CCC

Glu Asn Leu Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val Cys Ala Arg  
 GAG AAC CTT CCT TAC CTG GTA GCG TAC CAA GCC ACC GTG TGC GCT AGG  
 CTC TTG GAA GGA ATG GAC CAT CGC ATG GTT CGG TGG CAC ACG CGA TCC

Ala Gln Ala Pro Pro Pro Ser Trp Asp Gln Met Trp Lys Cys Leu Ile  
 GCT CAA GCC CCT CCC CCA TCG TGG GAC CAG ATG TGG AAG TGT TTG ATT  
 CGA GTT CGG GGA GGG GGT AGC ACC CTG GTC TAC ACC TTC ACA AAC TAA

Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu Leu Tyr Arg Leu  
 CGC CTC AAG CCC ACC CTC CAT GGG CCA ACA CCC CTG CTA TAC AGA CTG  
 GCG GAG TTC GGG TGG GAG GTA CCC GGT TGT GGG GAC GAT ATG TCT GAC

Gly Ala Ala Glu Phe  
 GGC GCT GCC GAA TTC  
 CCG CGA CGG CTT AAG

↑  
 EcoRI

Figure 7

3019312

C33c:

Glu Phe Gly Ala Val Asp Phe Ile Pro Val Glu Asn Leu Glu Thr Thr  
GAA TTC GGG GCG GTG GAC TTT ATC CCT GTG GAG AAC CTA GAG ACA ACC  
CTT AAG CCC CGC CAC CTG AAA TAG GGA CAC CTC TTG GAT CTC TGT TGG

↑  
EcoRI

Met Arg Ser Pro Val Phe Thr Asp Asn Ser Ser Pro Pro Val Val Pro  
ATG AGG TCC CCG GTG TTC ACG GAT AAC TCC TCT CCA CCA GTA GTG CCC  
TAC TCC AGG GGC CAC AAG TGC CTA TTG AGG AGA GGT GGT CAT CAC GGG

Gln Ser Phe Gln Val Ala His Leu His Ala Pro Thr Gly Ser Gly Lys  
CAG AGC TTC CAG GTG GCT CAC CTC CAT GCT CCC ACA GGC AGC GGC AAA  
GTC TCG AAG GTC CAC CGA GTG GAG GTA CGA GGG TGT CCG TCG CCG TTT

Ser Thr Lys Val Pro Ala Ala Tyr Ala Ala Gln Gly Tyr Lys Val Leu  
AGC ACC AAG GTC CCG GCT GCA TAT GCA GCT CAG GGC TAT AAG GTG CTA  
TCG TGG TTC CAG GGC CGA CGT ATA CGT CGA GTC CCG ATA TTC CAC GAT

Val Leu Asn Pro Ser Val Ala Ala Thr Leu Gly Phe Gly Ala Tyr Met  
GTA CTC AAC CCC TCT GTT GCT GCA ACA CTG GGC TTT GGT GCT TAC ATG  
CAT GAG TTG GGG AGA CAA CGA CGT TGT GAC CCG AAA CCA CGA ATG TAC

Ser Lys Ala His Gly Ile Asp Pro Asn Ile Arg Thr Gly Val Arg Thr  
TCC AAG GCT CAT GGG ATC GAT CCT AAC ATC AGG ACC GGG GTG AGA ACA  
AGG TTC CGA GTA CCC TAG CTA GGA TTG TAG TCC TGG CCC CAC TCT TGT

Ile Thr Thr Gly Ser Pro Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu  
ATT ACC ACT GGC AGC CCC ATC ACG TAC TCC ACC TAC GGC AAG TTC CTT  
TAA TGG TGA CCG TCG GGG TAG TGC ATG AGG TGG ATG CCG TTC AAG GAA

Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Ile Ile Ile Cys Asp  
GCC GAC GGC GGG TGC TCG GGG GGC GCT TAT GAC ATA ATA ATT TGT GAC  
CGG CTG CCG CCC ACG AGC CCC CCG CGA ATA CTG TAT TAT TAA ACA CTG

Glu Cys His Ser Thr Asp Ala Thr Ser Ile Leu Gly Ile Gly Thr Val  
GAG TGC CAC TCC ACG GAT GCC ACA TCC ATC TTG GGC ATT GGC ACT GTC  
CTC ACG GTG AGG TGC CTA CGG TGT AGG TAG AAC CCG TAA CCG TGA CAG

Figure 8

Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val Leu Ala Thr  
 CTT GAC CAA GCA GAG ACT GCG GGG GCG AGA CTG GTT GTG CTC GCC ACC  
 GAA CTG GTT CGT CTC TGA CGC CCC CGC TCT GAC CAA CAC GAG CGG TGG

Ala Thr Pro Pro Gly Ser Val Thr Val Pro His Pro Asn Ile Glu Glu  
 GCC ACC CCT CCG GGC TCC GTC ACT GTG CCC CAT CCC AAC ATC GAG GAG  
 CGG TGG GGA GGC CCG AGG CAG TGA CAC GGG GTA GGG TTG TAG CTC CTC

Val Ala Leu Ser Thr Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile  
 GTT GCT CTG TCC ACC ACC GGA GAG ATC CCT TTT TAC GGC AAG GCT ATC  
 CAA CGA GAC AGG TGG TGG CCT CTC TAG GGA AAA ATG CCG TTC CGA TAG

Pro Leu Glu Val Ile Lys Gly Gly Arg His Leu Ile Phe Cys His Ser  
 CCC CTC GAA GTA ATC AAG GGG GGG AGA CAT CTC ATC TTC TGT CAT TCA  
 GGG GAG CTT CAT TAG TTC CCC CCC TCT GTA GAG TAG AAG ACA GTA AGT

Lys Lys Lys Cys Asp Glu Leu Ala Ala Lys Leu Val Ala Leu Gly Ile  
 AAG AAG AAG TGC GAC GAA CTC GCC GCA AAG CTG GTC GCA TTG GGC ATC  
 TTC TTC TTC ACG CTG CTT GAG CGG CGT TTC GAC CAG CGT AAC CCG TAG

Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr  
 AAT GCC GTG GCC TAC TAC CGC GGT CTT GAC GTG TCC GTC ATC CCG ACC  
 TTA CGG CAC CGG ATG ATG GCG CCA GAA CTG CAC AGG CAG TAG GGC TGG

Ser Gly Asp Val Val Val Val Ala Thr Asp Ala Leu Met Thr Gly Tyr  
 AGC GGC GAT GTT GTC GTC GTG GCA ACC GAT GCC CTC ATG ACC GGC TAT  
 TCG CCG CTA CAA CAG CAG CAC CGT TGG CTA CGG GAG TAC TGG CCG ATA

Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Thr Cys Ala Glu Phe  
 ACC GGC GAC TTC GAC TCG GTG ATA GAC TGC AAT ACG TGT GCC GAA TTC  
 TGG CCG CTG AAG CTG AGC CAC TAT CTG ACG TTA TGC ACA CGG CTT AAG

↑  
 HinfI

↑  
 EcoRI

Figure 8 (Continued)

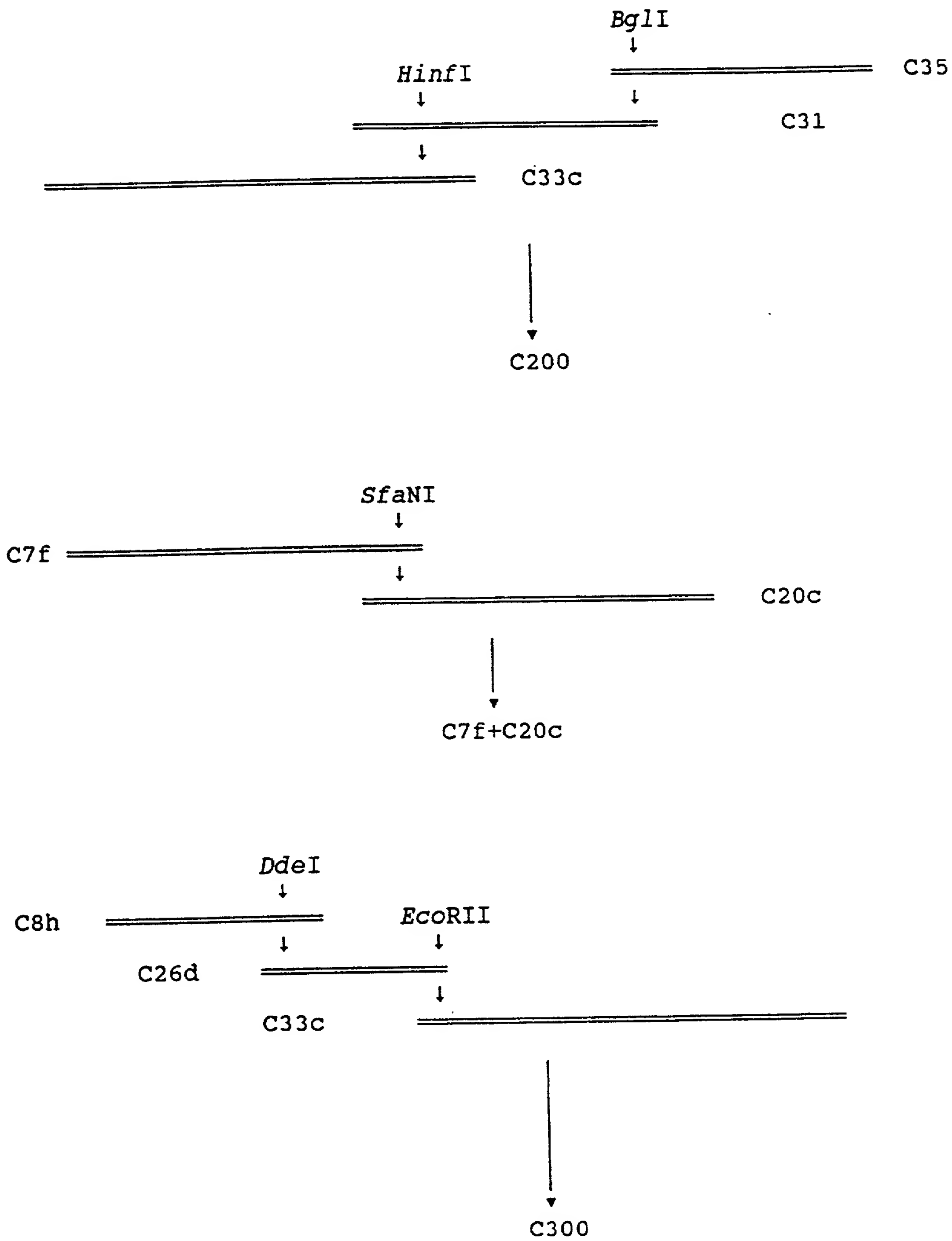


Figure 9



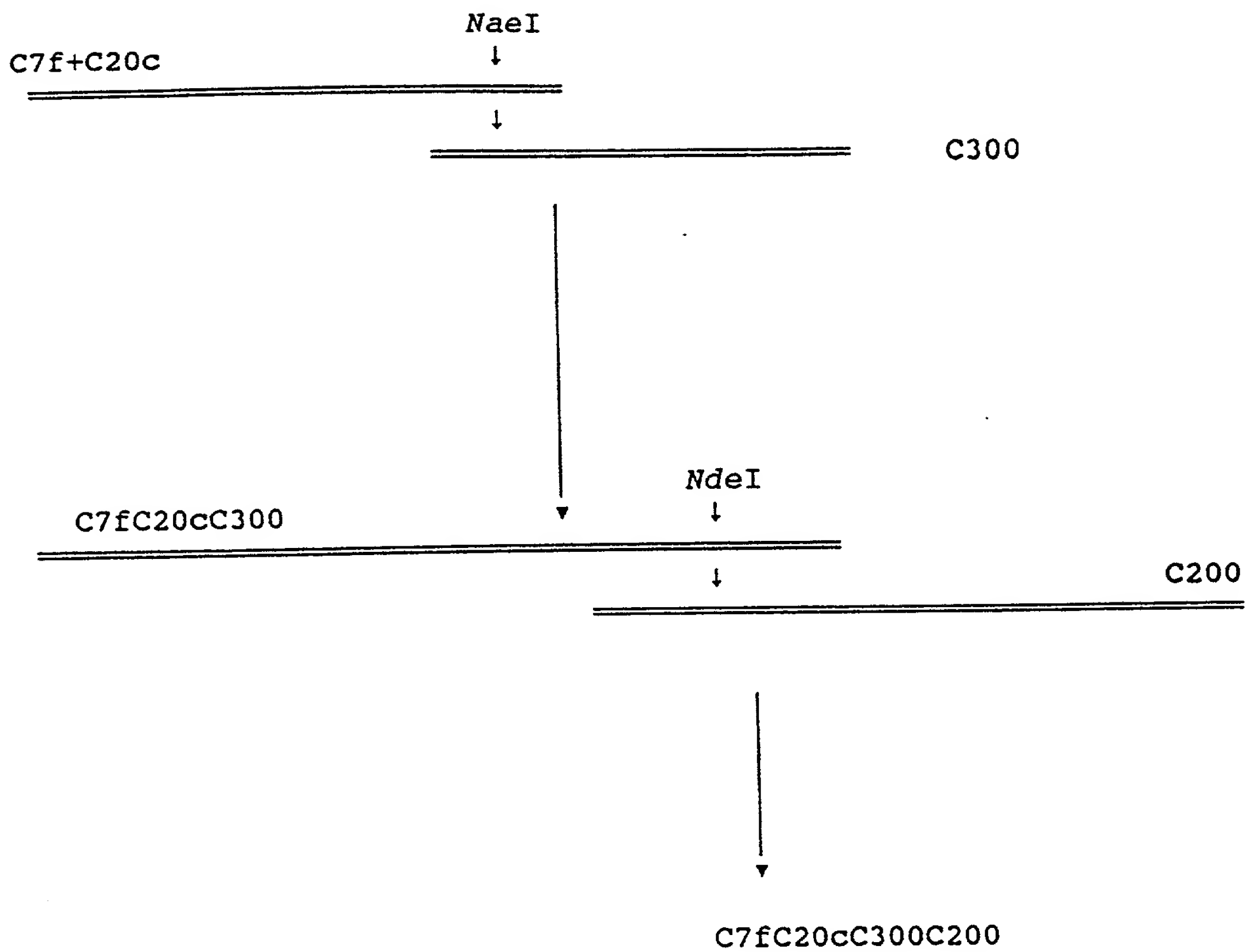


Figure 9 (Continued)

																-155					-150							
																Met	Ala	Thr	Asn	Pro	Val	Cys	Val	Leu				
																ATG	GCT	ACA	AAC	CCT	GTT	TGC	GTT	TTG				
																TAC	CGA	TGT	TTG	GGA	CAA	ACG	CAA	AAC				
				-145					-140					-135														
Lys	Gly	Asp	Gly	Pro	Val	Gln	Gly	Ile	Ile	Asn	Phe	Glu	Gln	Lys	Glu													
AAG	GGT	GAC	GGC	CCA	GTT	CAA	GGT	ATT	ATT	AAC	TTC	GAG	CAG	AAG	GAA													
TTC	CCA	CTG	CCG	GGT	CAA	GTT	CCA	TAA	TAA	TTG	AAG	CTC	GTC	TTC	CTT													
				-130					-125					-120														
Ser	Asn	Gly	Pro	Val	Lys	Val	Trp	Gly	Ser	Ile	Lys	Gly	Leu	Thr	Glu													
AGT	AAT	GGA	CCA	GTG	AAG	GTG	TGG	GGA	AGC	ATT	AAA	GGA	CTG	ACT	GAA													
TCA	TTA	CCT	GGT	CAC	TTC	CAC	ACC	CCT	TCG	TAA	TTT	CCT	GAC	TGA	CTT													
				-110					-105					-100														
Gly	Leu	His	Gly	Phe	His	Val	His	Glu	Phe	Gly	Asp	Asn	Thr	Ala	Gly													
GGC	CTG	CAT	GGA	TTC	CAT	GTT	CAT	GAG	TTT	GGA	GAT	AAT	ACA	GCA	GGC													
CCG	GAC	GTA	CCT	AAG	GTA	CAA	GTA	CTC	AAA	CCT	CTA	TTA	TGT	CGT	CCG													
				-95					-90					-85														
Cys	Thr	Ser	Pro	Gly	Pro	His	Phe	Asn	Pro	Leu	Ser	Arg	Lys	His	Gly													
TGT	ACC	AGT	CCA	GGT	CCT	CAC	TTT	AAT	CCT	CTA	TCC	AGA	AAA	CAC	GGT													
ACA	TGG	TCA	GGT	CCA	GGA	GTG	AAA	TTA	GGA	GAT	AGG	TCT	TTT	GTG	CCA													
				-80					-75					-70														
Gly	Pro	Lys	Asp	Glu	Glu	Arg	His	Val	Gly	Asp	Leu	Gly	Asn	Val	Thr													
GGG	CCA	AAG	GAT	GAA	GAG	AGG	CAT	GTT	GGA	GAC	TTG	GGC	AAT	GTG	ACT													
CCC	GGT	TTC	CTA	CTT	CTC	TCC	GTA	CAA	CCT	CTG	AAC	CCG	TTA	CAC	TGA													
				-65					-60					-55														
Ala	Asp	Lys	Asp	Gly	Val	Ala	Asp	Val	Ser	Ile	Glu	Asp	Ser	Val	Ile													
GCT	GAC	AAA	GAT	GGT	GTG	GCC	GAT	GTG	TCT	ATT	GAA	GAT	TCT	GTG	ATC													
CGA	CTG	TTT	CTA	CCA	CAC	CGG	CTA	CAC	AGA	TAA	CTT	CTA	AGA	CAC	TAG													
				-50					-45					-40														
Ser	Leu	Ser	Gly	Asp	His	Cys	Ile	Ile	Gly	Arg	Thr	Leu	Val	Val	His													
TCA	CTC	TCA	GGA	GAC	CAT	TGC	ATC	ATT	GGC	CGC	ACA	CTG	GTG	GTC	CAT													
AGT	GAG	AGT	CCT	CTG	GTA	ACG	TAG	TAA	CCG	GCG	TGT	GAC	CAC	CAG	GTA													
				-30					-25					-20														
Glu	Lys	Ala	Asp	Asp	Leu	Gly	Lys	Gly	Gly	Asn	Glu	Glu	Ser	Thr	Lys													
GAA	AAA	GCA	GAT	GAC	TTG	GGC	AAA	GGT	GGA	AAT	GAA	GAA	AGT	ACA	AAG													
CTT	TTT	CGT	CTA	CTG	AAC	CCG	TTT	CCA	CCT	TTA	CTT	CTT	TCA	TGT	TTC													
				-15					-10					-5														
Thr	Gly	Asn	Ala	Gly	Ser	Arg	Leu	Ala	Cys	Gly	Val	Ile	Gly	Ile	Arg													
ACA	GGA	AAC	GCT	GGA	AGT	CGT	TTG	GCT	TGT	GGT	GTA	ATT	GGG	ATC	CGA													
TGT	CCT	TTG	CGA	CCT	TCA	GCA	AAC	CGA	ACA	CCA	CAT	TAA	CCC	TAG	GCT													

Figure 10



			130					135					140				
Thr	Cys	Ile	Ile	Asn	Gly	Val	Cys	Trp	Thr	Val	Tyr	His	Gly	Ala	Gly		
ACG	TGC	ATC	ATC	AAT	GGG	GTG	TGC	TGG	ACT	GTC	TAC	CAC	GGG	GCC	GGA		
TGC	ACG	TAG	TAG	TTA	CCC	CAC	ACG	ACC	TGA	CAG	ATG	GTG	CCC	CGG	CCT		
		145					150					155					
Thr	Arg	Thr	Ile	Ala	Ser	Pro	Lys	Gly	Pro	Val	Ile	Gln	Met	Tyr	Thr		
ACG	AGG	ACC	ATC	GCG	TCA	CCC	AAG	GGT	CCT	GTC	ATC	CAG	ATG	TAT	ACC		
TGC	TCC	TGG	TAG	CGC	AGT	GGG	TTC	CCA	GGA	CAG	TAG	GTC	TAC	ATA	TGG		
	160					165				170							
Asn	Val	Asp	Gln	Asp	Leu	Val	Gly	Trp	Pro	Ala	Ser	Gln	Gly	Thr	Arg		
AAT	GTA	GAC	CAA	GAC	CTT	GTG	GGC	TGG	CCC	GCT	TCG	CAA	GGT	ACC	CGC		
TTA	CAT	CTG	GTT	CTG	GAA	CAC	CCG	ACC	GGG	CGA	AGC	GTT	CCA	TGG	GCG		
175						180				185						190	
Ser	Leu	Thr	Pro	Cys	Thr	Cys	Gly	Ser	Ser	Asp	Leu	Tyr	Leu	Val	Thr		
TCA	TTG	ACA	CCC	TGC	ACT	TGC	GGC	TCC	TCG	GAC	CTT	TAC	CTG	GTC	ACG		
AGT	AAC	TGT	GGG	ACG	TGA	ACG	CCG	AGG	AGC	CTG	GAA	ATG	GAC	CAG	TGC		
				195					200					205			
Arg	His	Ala	Asp	Val	Ile	Pro	Val	Arg	Arg	Arg	Gly	Asp	Ser	Arg	Gly		
AGG	CAC	GCC	GAT	GTC	ATT	CCC	GTG	CGC	CGG	CGG	GGT	GAT	AGC	AGG	GGC		
TCC	GTG	CGG	CTA	CAG	TAA	GGG	CAC	GCG	GCC	GCC	CCA	CTA	TCG	TCC	CCG		
								↑									
								NaeI									
		210						215					220				
Ser	Leu	Leu	Ser	Pro	Arg	Pro	Ile	Ser	Tyr	Leu	Lys	Gly	Ser	Ser	Gly		
AGC	CTG	CTG	TCG	CCC	CGG	CCC	ATT	TCC	TAC	TTG	AAA	GGC	TCC	TCG	GGG		
TCG	GAC	GAC	AGC	GGG	GCC	GGG	TAA	AGG	ATG	AAC	TTT	CCG	AGG	AGC	CCC		
		225					230					235					
Gly	Pro	Leu	Leu	Cys	Pro	Ala	Gly	His	Ala	Val	Gly	Ile	Phe	Arg	Ala		
GGT	CCG	CTG	TTG	TGC	CCC	GCG	GGG	CAC	GCC	GTG	GGC	ATA	TTT	AGG	GCC		
CCA	GGC	GAC	AAC	ACG	GGG	CGC	CCC	GTG	CGG	CAC	CCG	TAT	AAA	TCC	CGG		
	240					245				250							
Ala	Val	Cys	Thr	Arg	Gly	Val	Ala	Lys	Ala	Val	Asp	Phe	Ile	Pro	Val		
GCG	GTG	TGC	ACC	CGT	GGA	GTG	GCT	AAG	GCG	GTG	GAC	TTT	ATC	CCT	GTG		
CGC	CAC	ACG	TGG	GCA	CCT	CAC	CGA	TTC	CGC	CAC	CTG	AAA	TAG	GGA	CAC		

Figure 10 (continued)

255					260						265					270
Glu	Asn	Leu	Glu	Thr	Thr	Met	Arg	Ser	Pro	Val	Phe	Thr	Asp	Asn	Ser	
GAG	AAC	CTA	GAG	ACA	ACC	ATG	AGG	TCC	CCG	GTG	TTC	ACG	GAT	AAC	TCC	
CTC	TTG	GAT	CTC	TGT	TGG	TAC	TCC	AGG	GGC	CAC	AAG	TGC	CTA	TTG	AGG	

				275						280					285	
Ser	Pro	Pro	Val	Val	Pro	Gln	Ser	Phe	Gln	Val	Ala	His	Leu	His	Ala	
TCT	CCA	CCA	GTA	GTG	CCC	CAG	AGC	TTC	CAG	GTG	GCT	CAC	CTC	CAT	GCT	
AGA	GGT	GGT	CAT	CAC	GGG	GTC	TCG	AAG	GTC	CAC	CGA	GTG	GAG	GTA	CGA	

			290						295				300			
Pro	Thr	Gly	Ser	Gly	Lys	Ser	Thr	Lys	Val	Pro	Ala	Ala	Tyr	Ala	Ala	
CCC	ACA	GGC	AGC	GGC	AAA	AGC	ACC	AAG	GTC	CCG	GCT	GCA	TAT	GCA	GCT	
GGG	TGT	CCG	TCG	CCG	TTT	TCG	TGG	TTC	CAG	GGC	CGA	CGT	ATA	CGT	CGA	
													↑			
													NdeI			

		305					310					315				
Gln	Gly	Tyr	Lys	Val	Leu	Val	Leu	Asn	Pro	Ser	Val	Ala	Ala	Thr	Leu	
CAG	GGC	TAT	AAG	GTG	CTA	GTA	CTC	AAC	CCC	TCT	GTT	GCT	GCA	ACA	CTG	
GTC	CCG	ATA	TTC	CAC	GAT	CAT	GAG	TTG	GGG	AGA	CAA	CGA	CGT	TGT	GAC	

	320					325					330					
Gly	Phe	Gly	Ala	Tyr	Met	Ser	Lys	Ala	His	Gly	Ile	Asp	Pro	Asn	Ile	
GGC	TTT	GGT	GCT	TAC	ATG	TCC	AAG	GCT	CAT	GGG	ATC	GAT	CCT	AAC	ATC	
CCG	AAA	CCA	CGA	ATG	TAC	AGG	TTC	CGA	GTA	CCC	TAG	CTA	GGA	TTG	TAG	

335					340					345					350	
Arg	Thr	Gly	Val	Arg	Thr	Ile	Thr	Thr	Gly	Ser	Pro	Ile	Thr	Tyr	Ser	
AGG	ACC	GGG	GTG	AGA	ACA	ATT	ACC	ACT	GGC	AGC	CCC	ATC	ACG	TAC	TCC	
TCC	TGG	CCC	CAC	TCT	TGT	TAA	TGG	TGA	CCG	TCG	GGG	TAG	TGC	ATG	AGG	

			355						360					365		
Thr	Tyr	Gly	Lys	Phe	Leu	Ala	Asp	Gly	Gly	Cys	Ser	Gly	Gly	Ala	Tyr	
ACC	TAC	GGC	AAG	TTC	CTT	GCC	GAC	GGC	GGG	TGC	TCG	GGG	GGC	GCT	TAT	
TGG	ATG	CCG	TTC	AAG	GAA	CGG	CTG	CCG	CCC	ACG	AGC	CCC	CCG	CGA	ATA	

		370						375				380				
Asp	Ile	Ile	Ile	Cys	Asp	Glu	Cys	His	Ser	Thr	Asp	Ala	Thr	Ser	Ile	
GAC	ATA	ATA	ATT	TGT	GAC	GAG	TGC	CAC	TCC	ACG	GAT	GCC	ACA	TCC	ATC	
CTG	TAT	TAT	TAA	ACA	CTG	CTC	ACG	GTG	AGG	TGC	CTA	CGG	TGT	AGG	TAG	

Figure 10 (continued)

		385					390					395					
Leu	Gly	Ile	Gly	Thr	Val	Leu	Asp	Gln	Ala	Glu	Thr	Ala	Gly	Ala	Arg		
TTG	GGC	ATT	GGC	ACT	GTC	CTT	GAC	CAA	GCA	GAG	ACT	GCG	GGG	GCG	AGA		
AAC	CCG	TAA	CCG	TGA	CAG	GAA	CTG	GTT	CGT	CTC	TGA	CGC	CCC	CGC	TCT		

	400					405					410						
Leu	Val	Val	Leu	Ala	Thr	Ala	Thr	Pro	Pro	Gly	Ser	Val	Thr	Val	Pro		
CTG	GTT	GTG	CTC	GCC	ACC	GCC	ACC	CCT	CCG	GGC	TCC	GTC	ACT	GTG	CCC		
GAC	CAA	CAC	GAG	CGG	TGG	CGG	TGG	GGA	GGC	CCG	AGG	CAG	TGA	CAC	GGG		

415					420					425					430		
His	Pro	Asn	Ile	Glu	Glu	Val	Ala	Leu	Ser	Thr	Thr	Gly	Glu	Ile	Pro		
CAT	CCC	AAC	ATC	GAG	GAG	GTT	GCT	CTG	TCC	ACC	ACC	GGA	GAG	ATC	CCT		
GTA	GGG	TTG	TAG	CTC	CTC	CAA	CGA	GAC	AGG	TGG	TGG	CCT	CTC	TAG	GGA		

				435						440				445			
Phe	Tyr	Gly	Lys	Ala	Ile	Pro	Leu	Glu	Val	Ile	Lys	Gly	Gly	Arg	His		
TTT	TAC	GGC	AAG	GCT	ATC	CCC	CTC	GAA	GTA	ATC	AAG	GGG	GGG	AGA	CAT		
AAA	ATG	CCG	TTC	CGA	TAG	GGG	GAG	CTT	CAT	TAG	TTC	CCC	CCC	TCT	GTA		

			450					455				460					
Leu	Ile	Phe	Cys	His	Ser	Lys	Lys	Lys	Cys	Asp	Glu	Leu	Ala	Ala	Lys		
CTC	ATC	TTC	TGT	CAT	TCA	AAG	AAG	AAG	TGC	GAC	GAA	CTC	GCC	GCA	AAG		
GAG	TAG	AAG	ACA	GTA	AGT	TTC	TTC	TTC	ACG	CTG	CTT	GAG	CGG	CGT	TTC		

		465				470						475					
Leu	Val	Ala	Leu	Gly	Ile	Asn	Ala	Val	Ala	Tyr	Tyr	Arg	Gly	Leu	Asp		
CTG	GTC	GCA	TTG	GGC	ATC	AAT	GCC	GTG	GCC	TAC	TAC	CGC	GGT	CTT	GAC		
GAC	CAG	CGT	AAC	CCG	TAG	TTA	CGG	CAC	CGG	ATG	ATG	GCG	CCA	GAA	CTG		

	480					485						490					
Val	Ser	Val	Ile	Pro	Thr	Ser	Gly	Asp	Val	Val	Val	Val	Ala	Thr	Asp		
GTG	TCC	GTC	ATC	CCG	ACC	AGC	GGC	GAT	GTT	GTC	GTC	GTG	GCA	ACC	GAT		
CAC	AGG	CAG	TAG	GGC	TGG	TCG	CCG	CTA	CAA	CAG	CAG	CAC	CGT	TGG	CTA		

Figure 10 (continued)

495					500					505					510
Ala	Leu	Met	Thr	Gly	Tyr	Thr	Gly	Asp	Phe	Asp	Ser	Val	Ile	Asp	Cys
GCC	CTC	ATG	ACC	GGC	TAT	ACC	GGC	GAC	TTC	GAC	TCG	GTG	ATA	GAC	TGC
CGG	GAG	TAC	TGG	CCG	ATA	TGG	CCG	CTG	AAG	CTG	AGC	CAC	TAT	CTG	ACG

				515					520					525	
Asn	Thr	Cys	Val	Thr	Gln	Thr	Val	Asp	Phe	Ser	Leu	Asp	Pro	Thr	Phe
AAT	ACG	TGT	GTC	ACC	CAG	ACA	GTC	GAT	TTC	AGC	CTT	GAC	CCT	ACC	TTC
TTA	TGC	ACA	CAG	TGG	GTC	TGT	CAG	CTA	AAG	TCG	GAA	CTG	GGA	TGG	AAG

			530						535					540	
Thr	Ile	Glu	Thr	Ile	Thr	Leu	Pro	Gln	Asp	Ala	Val	Ser	Arg	Thr	Gln
ACC	ATT	GAG	ACA	ATC	ACG	CTC	CCC	CAA	GAT	GCT	GTC	TCC	CGC	ACT	CAA
TGG	TAA	CTC	TGT	TAG	TGC	GAG	GGG	GTT	CTA	CGA	CAG	AGG	GCG	TGA	GTT

		545						550					555		
Arg	Arg	Gly	Arg	Thr	Gly	Arg	Gly	Lys	Pro	Gly	Ile	Tyr	Arg	Phe	Val
CGT	CGG	GGC	AGG	ACT	GGC	AGG	GGG	AAG	CCA	GGC	ATC	TAC	AGA	TTT	GTG
GCA	GCC	CCG	TCC	TGA	CCG	TCC	CCC	TTC	GGT	CCG	TAG	ATG	TCT	AAA	CAC

	560						565					570			
Ala	Pro	Gly	Glu	Arg	Pro	Pro	Gly	Met	Phe	Asp	Ser	Ser	Val	Leu	Cys
GCA	CCG	GGG	GAG	CGC	CCT	CCC	GGC	ATG	TTC	GAC	TCG	TCC	GTC	CTC	TGT
CGT	GGC	CCC	CTC	GCG	GGA	GGG	CCG	TAC	AAG	CTG	AGC	AGG	CAG	GAG	ACA

575					580					585					590
Glu	Cys	Tyr	Asp	Ala	Gly	Cys	Ala	Trp	Tyr	Glu	Leu	Thr	Pro	Ala	Glu
GAG	TGC	TAT	GAC	GCA	GGC	TGT	GCT	TGG	TAT	GAG	CTC	ACG	CCC	GCC	GAG
CTC	ACG	ATA	CTG	CGT	CCG	ACA	CGA	ACC	ATA	CTC	GAG	TGC	GGG	CGG	CTC

				595					600					605	
Thr	Thr	Val	Arg	Leu	Arg	Ala	Tyr	Met	Asn	Thr	Pro	Gly	Leu	Pro	Val
ACT	ACA	GTT	AGG	CTA	CGA	GCG	TAC	ATG	AAC	ACC	CCG	GGG	CTT	CCC	GTG
TGA	TGT	CAA	TCC	GAT	GCT	CGC	ATG	TAC	TTG	TGG	GGC	CCC	GAA	GGG	CAC

Figure 10 (continued)



			610						615					620			
Cys	Gln	Asp	His	Leu	Glu	Phe	Trp	Glu	Gly	Val	Phe	Thr	Gly	Leu	Thr		
TGC	CAG	GAC	CAT	CTT	GAA	TTT	TGG	GAG	GGC	GTC	TTT	ACA	GGC	CTC	ACT		
ACG	GTC	CTG	GTA	GAA	CTT	AAA	ACC	CTC	CCG	CAG	AAA	TGT	CCG	GAG	TGA		

		625						630					635				
His	Ile	Asp	Ala	His	Phe	Leu	Ser	Gln	Thr	Lys	Gln	Ser	Gly	Glu	Asn		
CAT	ATA	GAT	GCC	CAC	TTT	CTA	TCC	CAG	ACA	AAG	CAG	AGT	GGG	GAG	AAC		
GTA	TAT	CTA	CGG	GTG	AAA	GAT	AGG	GTC	TGT	TTC	GTC	TCA	CCC	CTC	TTG		

	640						645					650					
Leu	Pro	Tyr	Leu	Val	Ala	Tyr	Gln	Ala	Thr	Val	Cys	Ala	Arg	Ala	Gln		
CTT	CCT	TAC	CTG	GTA	GCG	TAC	CAA	GCC	ACC	GTG	TGC	GCT	AGG	GCT	CAA		
GAA	GGA	ATG	GAC	CAT	CGC	ATG	GTT	CGG	TGG	CAC	ACG	CGA	TCC	CGA	GTT		

655						660					665					670	
Ala	Pro	Pro	Pro	Ser	Trp	Asp	Gln	Met	Trp	Lys	Cys	Leu	Ile	Arg	Leu		
GCC	CCT	CCC	CCA	TCG	TGG	GAC	CAG	ATG	TGG	AAG	TGT	TTG	ATT	CGC	CTC		
CGG	GGA	GGG	GGT	AGC	ACC	CTG	GTC	TAC	ACC	TTC	ACA	AAC	TAA	GCG	GAG		

				675						680					685		
Lys	Pro	Thr	Leu	His	Gly	Pro	Thr	Pro	Leu	Leu	Tyr	Arg	Leu	Gly	Ala		
AAG	CCC	ACC	CTC	CAT	GGG	CCA	ACA	CCC	CTG	CTA	TAC	AGA	CTG	GGC	GCT		
TTC	GGG	TGG	GAG	GTA	CCC	GGT	TGT	GGG	GAC	GAT	ATG	TCT	GAC	CCG	CGA		

Figure 10 (continued)